DIGITAL TRANSFORMATIONS FOR HEALTH LAB

GOVERNING HEALTH FUTURES 2030

Preventing digital harms among young people: Applying a public health framework

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Authors: Sofia Castro Lopes and Louise Holly

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Contents

Key messages

- Governments are increasingly addressing children's online safety, but current policies focus mainly on primary and secondary prevention mechanisms, largely through laws and reporting, with less attention to primordial measures that shape safer digital environments (upstream) and tertiary support for children who experience harm (downstream).

- As digital determinants increasingly influence children's health and well-being, governments need to move beyond a regulatory approach and consider using a public health approach to address online safety across the full continuum of prevention, harm reduction and response.

- A public health approach can strengthen policy action by combining interventions across sectors and levels of influence, addressing both digital environments and individual needs, and strengthening monitoring and evaluation to ensure policies are effectively implemented and achieve meaningful improvements in children's well-being.

Introduction

The digital environment has become a fundamental setting in which children's and adolescents' health, well-being and development are shaped. Alongside unprecedented opportunities for learning, social connection and participation, growing evidence links unsafeguarded digital environments to adverse outcomes, including poor mental health, sleep disruption, physical health impacts, impaired healthy development and reduced well-being (Banerjee & Holly, 2026; Sanders et al., 2024; Teague et al., 2026; World Health Organization, 2025). Because these exposures occur during critical stages of development, when lifelong health behaviours and developmental trajectories are established, protecting children online has become an increasingly important public health priority. Given the rapid evolution of digital technologies and the continuing uncertainty surrounding their long-term effects, precautionary approaches have increasingly been advocated (Kickbusch et al., 2021; Skinner & Foljambe, 2025; World Health Organization, 2026).

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Governments have responded with legislation, regulations, national strategies and programmes aimed at improving children's safety online, ranging from platform accountability measures and age-related restrictions, to digital literacy initiatives and child protection policies (Castro Lopes et al., 2025). These responses are likely to have lasting implications because they shape the digital environments in which children grow, learn and interact, influencing not only immediate well-being but also future health

and development. However, national approaches differ considerably in their objectives, regulatory mechanisms, sectoral leadership and the distribution of responsibility between children and families, governments and digital service providers.

> *Public health offers a useful framework for understanding and responding to complex risks shaped by social, commercial and environmental factors.*

Despite this growing policy activity, little comparative evidence exists on how countries are responding across the full range of interventions needed to prevent harm and promote healthy digital engagement. Existing analyses have largely focused on legal and regulatory developments, comparisons between a small number of high-income countries, or specific forms of online harm, such as child sexual exploitation (Castro Lopes et al., 2025; World Health Organization, 2025). To our knowledge, no previous study has systematically examined children's online safety policies across countries through a public health framework.

Public health offers a useful framework for understanding and responding to complex risks shaped by social, commercial and environmental factors. Rather than viewing children's online safety solely as an issue of technology regulation or law enforcement, this perspective recognizes digital environments as part of the digital determinants of health and emphasizes prevention, health promotion and coordinated action across sectors (Holly et al., 2024; Kickbusch, 2026). Established public health concepts therefore provide a systematic basis for describing and comparing policy interventions according to their prevention focus, socioecological level of action, and use of health promotion and harm reduction strategies.

This study maps and characterizes the interventions contained in laws, regulations, strategies and programmes addressing children's and adolescents' online safety across high-, middle- and low-income countries using a public health framework. In doing so, it demonstrates how established public health concepts can be applied to the comparative analysis of national online safety policies, providing a systematic approach to examining how governments seek to prevent online harms and promote children's health and well-being in digital environments.

Methods

Study design and country selection

A policy mapping exercise was conducted to identify and analyse national and supranational policy instruments addressing children's online safety and digital well-being, coded through a public health lens. Thirty countries were purposely selected to ensure variation across World Bank income classifications and internet penetration levels, providing coverage of all world regions. A total of ten high-income (HIC – Australia, Canada, Germany, Ireland, Japan, Republic of Korea, Sweden, United Arab Emirates (UAE), United Kingdom, United States), eight upper-middle-income (UMIC – Argentina, Brazil, China, Colombia, Mexico, South Africa, Thailand, Turkey), seven lower-middle-income (LMIC – Egypt, India, Kenya, Morocco, Nigeria, Pakistan, Philippines) and five low-income countries (LIC – Bangladesh, Cambodia, Ethiopia, Senegal, Tanzania) were selected.

Search strategy

Documents were identified through structured online searches using general search engines, national policy and legislative databases, and the websites of relevant ministries and government agencies (e.g., ministries of digital affairs, communications regulators, child protection authorities). AI-assisted tools were used to retrieve additional documents and contextual information. All AI-retrieved material was treated as a lead only and verified against the original government document or official platform before inclusion. For every mapped instrument, the official document or government platform was retrieved and reviewed before any data were extracted. No data element was coded from secondary sources, organizational summaries or news

reporting alone. Where a primary source could not be found, the field was flagged as unverified.

Eligibility criteria

Documents were included if they met all of the following criteria: (1) specifically addressed online safety, digital harms or digital well-being of children and young people; (2) constituted a named, published document or programme with a defined intervention logic; (3) were government-led or government-mandated (civil society or multi-stakeholder instruments required a confirmed government institutional anchor); (4) were national in scope, or supranational/multilateral where formally applicable to or adopted by the selected countries; and (5) were approved or enacted and currently active. Discontinued policies and instruments still under national discussion or pending approval were excluded from the analysis; the latter were retained in the database and noted descriptively given the relevance of their content. Supranational and multilateral instruments meeting the criteria were mapped separately for each sampled country in which they apply, to preserve visibility of national policy contexts and gaps.

Data extraction

Prior to data collection, an extraction grid was developed in Microsoft Excel with key data elements supporting the research question: country and income group; document type and title; date and source; responsible sector and implementing partners; tier of intervention (laws and regulations; strategies; programmes and initiatives); up to four intervention components, each coded for the type of intervention, the risk addressed and the level of prevention (primordial, primary, secondary and tertiary); health promotion interventions and their type; harm reduction approach and type; target groups, coded to a level of the socioecological model (SEM) adapted from the Centre for Disease Control and Prevention (CDC) framework for violence prevention (CDC, 2025). All documents fulfilling the inclusion criteria were reviewed in full and data were extracted by the researcher; coding decisions were documented in an observations field.

Coding framework

Prevention levels were coded using definitions adapted from the public health prevention continuum and based on the definitions used by Ishizumi et al, 2024 (Ishizumi et al., 2024). Key definitions included:

- **Primordial prevention:** preventing the emergence of risk factors themselves, so that the conditions that generate harm do not exist in the first place. Intervention targets the root causes and upstream determinants of risk, not the risk itself.
- **Primary prevention:** the risk factor exists in the environment, but intervention prevents individuals or populations, including children and adolescents, from being exposed to it before any harm occurs. The hazard is present; the intervention blocks the pathway between the risk and the person.
- **Secondary prevention:** harm has not yet fully occurred, but risk exposure has happened or is proximate. Intervention focuses on early detection, identification of at-risk individuals and prompt response to prevent harm from escalating or becoming established.

- **Tertiary prevention:** harm has already occurred. Intervention aims to reduce its impact, support recovery, prevent recurrence and minimize long-term consequences.

Consistent with a public health perspective, policies were examined for evidence of health promotion, a core component of public health alongside prevention. In addition, harm reduction interventions were mapped, an approach proposed as complementary in the context of children's digital engagement. 'Health promotion' was coded as present only where the primary source confirmed empowerment (youth agency, digital citizenship education), participation (youth involvement in governance or policy development) or capacity building (schools, communities, professionals). 'Harm reduction' was coded as present only where the source explicitly accepted that risk will occur and focused on minimizing damage through safer-use measures rather than preventing exposure through restriction.

Target groups were coded to four SEM levels: societal, community, relationship/interpersonal and individual (CDC, 2025). A single document could be coded at multiple prevention levels, SEM levels and risk domains.

Analysis

Descriptive content analyses were conducted on the final analytic set, cross-tabulating document types, risk domains addressed, prevention levels, health promotion, harm reduction and SEM levels by country income group. The primary unit of analysis was the country-mapping (each document counted once per country in which it applies); because the three shared supranational instruments were mapped in multiple countries and coded across several prevention levels, all coverage estimates were recalculated on unique national documents only, to distinguish coverage embedded in national instruments from coverage derived solely from shared supranational frameworks. For each country, it was then assessed which components of the coding framework were covered by its policy documents taken together. Ten components were used: the four levels of prevention, the four SEM levels, health promotion and harm reduction. A component was counted as covered where at least one qualifying document from that country was coded for it. While this approach shows how widely each country's documents span on the analytic framework used, it does not indicate how thoroughly any component is addressed, nor whether interventions are implemented. Analyses were performed in Excel and free-text fields were coded thematically.

Results

Study sample and document characteristics

The 30 selected countries comprised 10 high-income (HIC), 8 upper-middle-income (UMIC), 7 lower-middle-income (LMIC) and 5 low-income (LIC) countries. A total of 107 policy documents were identified across 30 countries. Four documents (in Canada, Morocco, Nigeria and Thailand) were under national discussion for approval at the time of the analysis and, following the inclusion and exclusion criteria, were not considered in the analysis despite the relevance of their content. Of the 103 documents analysed, 83 were unique national policies and 20 were country-mappings of three supranational or multilateral instruments shared across countries: the ITU Guidelines for Industry on Child Online Protection (2020; mapped in 10 countries), the African Union Child Online Safety and Empowerment Policy (2024; 7 countries) and the EU Digital Services Act (2022/24; 3 countries). These shared instruments were unevenly distributed, accounting for 9 of the 23 documents analysed in LMIC and 8 of 19 in LIC, compared with 3 of 42 in HIC and none in UMIC. The five LIC between them held 11 distinct national documents (mean 2.2 per country) and the LMIC 14 (2.0), compared with 39 in HIC (3.9). Mexico was the only country whose analysed instruments comprised solely a declaratory legislative provision and an educational guide, with no operational online safety law identified at national level.

Of the 103 documents, 55 (53%) were categorized as laws and regulations, 35 (34%) as national strategies and 13 (13%) as programmes and initiatives. Their distribution by income group is presented in Table 1.

Table 1. Distribution of different type of policy documents by countries' income group

	HIC*	UMIC	LMIC*	LIC*
Number of countries	**10**	**8**	**7**	**5**
Total number of documents	**42**	**19**	**23**	**19**
Laws and regulations	22	15	11	7
Strategies	9	3	11	12
Programmes and initiatives	11	1	1	0

*Ten LMIC and LIC share regional instruments for child online protection and well-being (ITU Guidelines; African Union policy); three HIC (Germany, Ireland, Sweden) share the EU Digital Services Act.

Interventions using public health lenses and target population

> *Colombia was the only country in the sample with a law addressing children's online safety from a health perspective*

Risk domains addressed

Across the 103 mapped documents, online child sexual exploitation and abuse (CSEA), encompassing child sexual abuse material (CSAM), grooming and sextortion, was the most frequently addressed risk domain (50% of documents), followed by exposure to harmful content (45%) and cyberbullying and online harassment (41%). Coverage exhibited a marked income gradient: CSEA dominated the policy agendas of LIC, LMIC and UMIC, where it was addressed by 63–68% of documents, but featured in only 26% of HIC documents. Conversely, a set of emergent harm domains appeared exclusively in wealthier groups: mental health, well-being and excessive technology use were addressed by 26% of UMIC and 26% of HIC documents but by none in the two lower-income groups; image-based abuse, including non-consensual intimate imagery and deepfakes, appeared only in UMIC and HIC documents (16% and 12%, respectively); and platform design and accountability was addressed almost exclusively in HIC (19%). Colombia was the only country in the sample with a law addressing children's online safety from a health perspective: Law 2564 of 2026 targets mental health and violence in the digital environment for children and adolescents. Three further instruments were led by health authorities, namely the Public Health Agency of Sweden's guidance on digital media use, England's Suicide Prevention Strategy 2023–2028 and the US Surgeon General's Advisory on Social Media and Youth Mental Health but all were guidance, strategy or advisory documents rather than legislation.

Levels of prevention and target groups

Most documents addressed primary (90%) and secondary (82%) prevention, whereas primordial (33%) and tertiary (32%) prevention were considerably less frequent. Primary prevention was present across all income groups (83–96%). Primordial prevention increased with income level, from 21% in LIC to 30% in LMIC, 32% in UMIC and 40% in HIC. Conversely, secondary prevention was most frequent in LIC (95%), declining to 74% in HIC, and tertiary prevention was lowest in HIC (26%) and comparable across the other income groups (35–37%).

Because the three shared instruments were coded across multiple prevention levels – the AU policy at all four levels, the ITU guidelines at primary and secondary and the EU Digital Services Act at primordial, primary and secondary – they contributed disproportionately to the coverage observed in the groups where they were mapped. When coverage was recalculated on unique national documents only, primordial prevention fell from 21% to 9% in LIC and from 40% to 36% in HIC, tertiary prevention in LMIC fell from 35% to 29%. It is also important to note that the same policy could have an intervention falling into different levels of prevention, depending when it should be implemented and the target group.

Coverage also varied by document type strategies addressed primordial (40%) and tertiary (46%) prevention more often than laws (35% and 24%), while programmes and initiatives concentrated at primary level (92%) and rarely addressed primordial prevention (8%). Furthermore, the targeted groups in the SEM varied markedly by document type. Societal-level provisions featured in 91% of laws and regulations and 94% of strategies, but in only 15% of programmes and initiatives. On the other hand, programmes most often targeted individuals (92%) and the relationship level (77%), compared with 78% and 29% of laws respectively. The mapping of all identified interventions against their respective levels of prevention is illustrated in Figure 1.

> *Explicit prohibition of addictive algorithmic features appeared in UMIC policies (e.g. China, Brazil), whereas in HIC, where safety-by-design provisions were more prevalent, such prohibitions were generally absent*

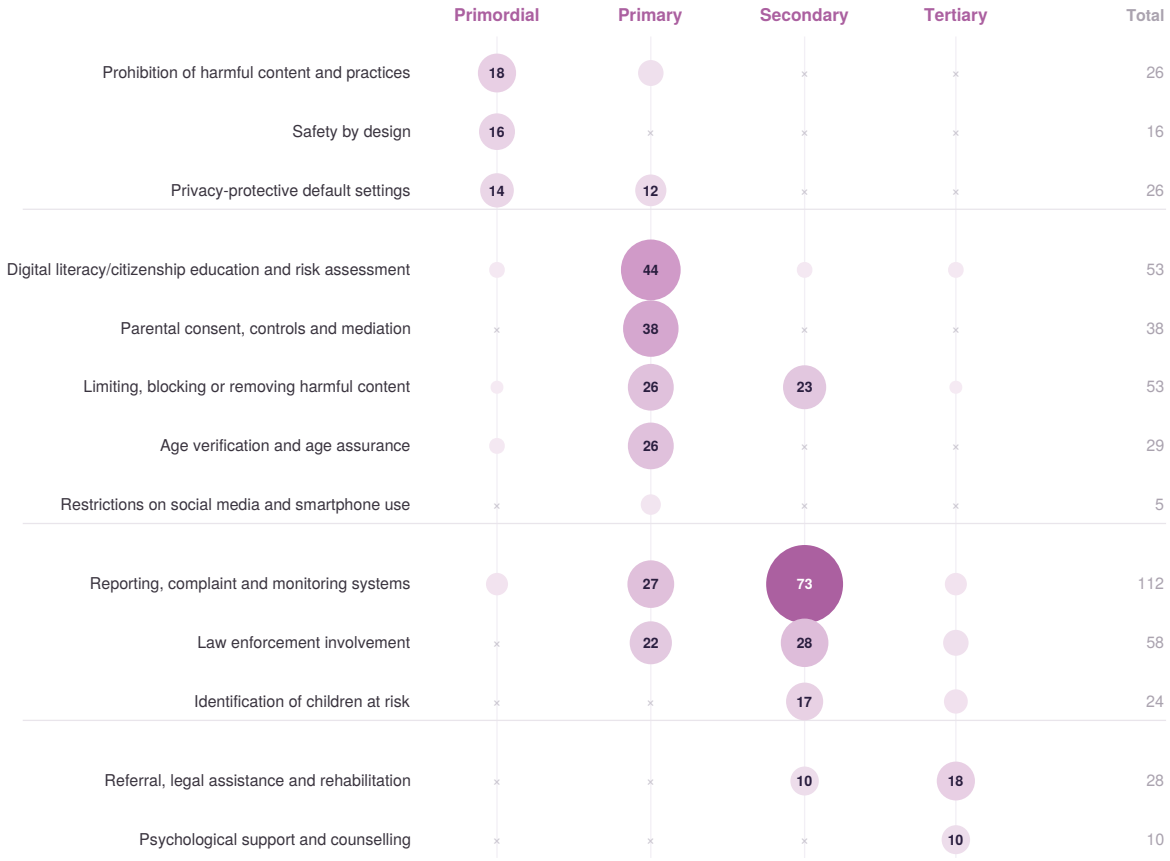
Primordial level interventions

Interventions at primordial level centred on safety by design, outright prohibition of harmful content and privacy-protective default settings. These interventions were almost exclusively societal in target (97% of documents with primordial coding addressed the societal level of the SEM), directed principally at service platforms and government agencies. Safety-by-design provisions appeared in national documents of all income groups except LIC, where only one national document – Tanzania's Electronic and Postal Communications (Online Content) Regulations 2020 – contained primordial-level provisions; all other primordial coverage in this group derived from the African Union policy. Safety by design was framed as embedding safety and healthy online experiences in the development of products and services. In some contexts, this extended beyond restricting access to violent or abusive content and advertising to eliminating manipulative design and algorithmic features with addictive potential for young users. Prohibition-based provisions, i.e. the complete ban of certain content or behaviours online, are often linked to

legal penalties, targeted sexual content, grooming and cyberbullying, as well as the exploitation of children's personal data and their commercial targeting. Notably, explicit prohibition of addictive algorithmic features appeared in UMIC policies (e.g. China, Brazil), whereas in HIC, where safety-by-design provisions were more prevalent, such prohibitions were generally absent, although Germany and the United Kingdom appear to be moving in this direction. In several countries, prohibitions were linked to penal codes enabling enforcement and criminalization.

Types of intervention by level of prevention

Number of intervention components coded at each prevention level (478 codings; 103 documents, 30 countries)



Intervention types and their grouping follow the categories described in the Results; within each prevention level, types are ordered from most to least frequently coded. Documents could be coded for up to four intervention components, each assigned to one level of prevention. Circle size and shade indicate the number of components coded; × indicates none coded.

Figure 1: Types of intervention by levels of prevention

Primary level interventions

At primary level, interventions fell into five key areas: (1) limiting or blocking access to harmful or inappropriate content, including age-verification mechanisms; (2) restrictions on social media and smartphone use; (3) moderation and monitoring systems (governmental and platform-based) to track and remove harmful content; (4) parental consent for data processing and privacy; and (5) digital literacy and citizenship education and risk awareness for children and

parents/carers. Reflecting this breadth, primary-level interventions spanned all SEM levels. The first three areas operated mainly at societal level, while the last two engaged the individual (children and young people), relationship (parents) and community (school) levels. Content-related interventions were most often linked to obscene material, CSAM, exploitation and grooming in all income groups except HIC, where policies additionally addressed content influencing mental health and well-being through less explicit pathways. Age verification and age assurance were not clearly articulated in LIC national policies, and social media and phone bans were observed only in HIC and UMIC. Digital literacy and digital citizenship education were present in different types of countries with a growing switch to building online agency, critical thinking and rights awareness from just passive safety knowledge. Country-specific examples worth noting include the EU Digital Services Act and its 2025 guidelines on the protection of minors (mapped for Germany, Ireland and Sweden) prescribe children's involvement in service providers' risk assessments; Turkey (UMIC) and Egypt (LMIC) promote child-friendly online environments that move beyond harm mitigation to encompass positive experiences and the balancing of benefits and risks, with Turkey also promoting offline alternatives.

Secondary level interventions

Secondary prevention focused predominantly on establishing and strengthening reporting and complaint systems, including hotlines for CSAM and exploitation, with streamlined mechanisms for rapid response (e.g., content removal, immediate initiation of investigation); law enforcement involvement was mentioned across all income groups. Reporting mechanisms were the single most frequent intervention type in the entire dataset, accounting for the large majority of secondary-level coding, whereas early identification through schools, health services or other child-facing settings was rarely specified. Monitoring and moderation mechanisms, both governmental and platform-based, featured in policies from HIC through LMIC. Interestingly, this type of intervention was also mapped as a primary mechanism given both the preventive and reactive nature, i.e. the prevention level depends on whether the action precedes or follows exposure. At this level, the intervention responds to exposure to harmful content. Some documents also addressed the identification of children at risk, although this appeared confined to severe situations of CSAM and sexual exploitation and abuse. Secondary-level interventions targeted primarily the societal level, government systems and platform mechanisms, with some also targeting individuals to promote awareness and use of reporting systems.

Tertiary level interventions

Across all income groups, tertiary interventions encompassed psychological support, referral mechanisms, legal assistance and rehabilitation for victims of sexual abuse and exploitation, and predominantly targeted individuals (88% of documents with tertiary coding), particularly victims of harm. HIC documents additionally included peer-group support and counselling centres addressing other online harms (e.g., cyberbullying) and the management of problematic or addiction-like use. Victim identification and rescue mechanisms featured in both HIC and LMIC documents.

Health promotion and harm reduction

Health promotion interventions were identified in 57 documents (58%), more frequently in LIC (67%) and LMIC (67%) than in UMIC (42%) and HIC (56%), a pattern largely reflecting the promotion-oriented framing of the shared ITU and AU instruments. When the shared instruments were counted once rather than per country, this apparent lower-income advantage disappeared: health promotion featured in 40–42% of LIC and LMIC national documents, compared with 53% in HIC. In LIC and LMIC, health promotion focused principally on digital literacy, whereas in HIC it more often comprised capacity building (12/23 documents) and empowerment, including digital citizenship education and youth co-design. Health promotion was present in nearly all documents addressing digital literacy (19/21) and mental health (13/16) and in around half of those addressing CSEA, harmful content and cyberbullying (51–57%), but was rare in documents addressing privacy (3/11) and image-based abuse (2/8). Finally, harm-reduction approaches which accept that children's online engagement entails some risk and seek to balance benefits and risks through safer-use measures rather than full bans or access restrictions, were identified in 17 documents, all from UMIC (4) and HIC (13).

Policies comprehensiveness

The overall comprehensiveness of the policy documents analysed, by country and income group, using the components analysed in this work, is mapped in Figure 2. Australia, Germany, Sweden, the United Kingdom and the United States covered all ten components (four prevention levels, four SEM levels, health promotion and harm reduction), although Sweden's full coverage depended on the shared EU Digital Services Act. Only the remaining four achieved it through national instruments alone. No country outside the high-income group reached full coverage. Among UMIC, coverage ranged from eight or nine components in China, Colombia and Turkey to six in Mexico, where neither environment-shaping (primordial) nor recovery-oriented (tertiary) components were covered. Colombia's Law 2564 of 2026 was the only law in the sample led by a ministry of health and framed explicitly around mental health in the digital environment. Rather than establishing a separate digital statute, it amends the national Mental Health Law (Ley 1616 of 2013) to incorporate online harms. It spans primary, secondary and tertiary prevention, and was the only Colombian instrument coded for both health promotion, through participation and empowerment approaches, and harm reduction.

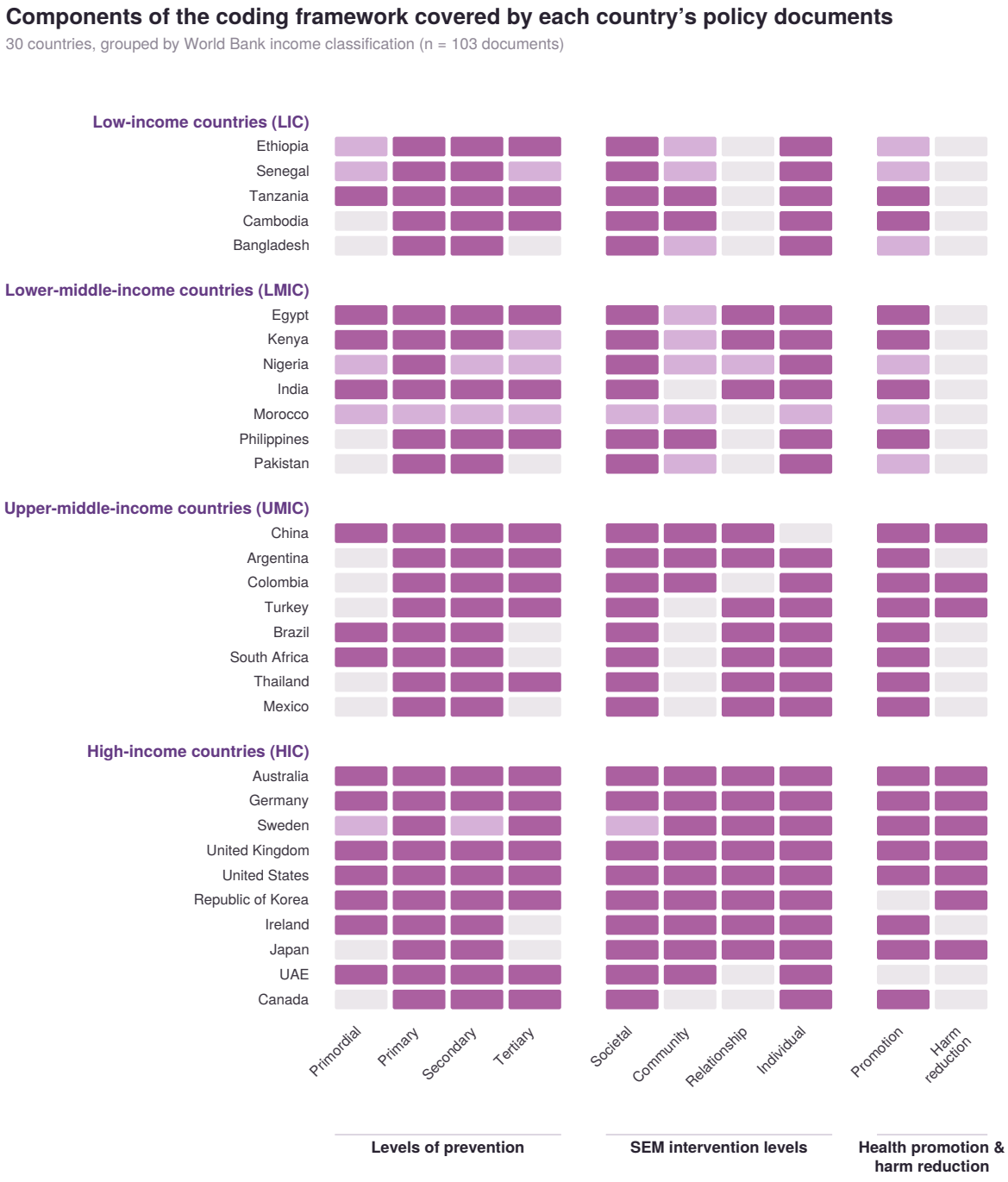


Figure 2: Comprehensiveness of the policies based on the coding framework

Discussion

This study mapped policy responses to children's and adolescents' online safety across 30 high-, middle- and low-income countries using a public health framework. Almost all countries had enacted measures to address online risks and harms, but the number, type and comprehensiveness of these responses varied markedly. Across settings, policy interventions were concentrated in the middle of the prevention continuum, focusing on reducing individual exposure to risk and providing mechanisms to report harms (primary and secondary prevention), while upstream action to shape digital environments and downstream measures to support recovery remained comparatively limited. Similarly only over half of the policies had health promotion interventions, focusing on capacity building, empowerment and digital literacy although this was not framed as health promotion in the majority of the instruments analysed. The nature of the harms addressed also shifted with national income, from a stronger emphasis on criminal harms in lower-income countries to broader concerns around mental well-being, healthy development and platform design in higher-income settings. However, no single instrument, and few national policy portfolios, addressed the full spectrum of prevention, socioecological reach and health promotion, suggesting that although policy activity is widespread, responses remain fragmented.

Primary prevention was dominated by digital literacy initiatives and parental consent, control and mediation, whereas secondary prevention relied almost exclusively on reporting and complaint mechanisms. Together, these findings describe an educate and report type of model in which children and families are expected to recognize, avoid and report online risks, with formal responses activated only after harms become apparent. Notably, reporting mechanisms and helplines (often linked to severe harms such as CSAM and

exploitation) were the most frequently coded interventions across the dataset, yet policies rarely specified proactive identification of children at risk through schools, health services or other child-facing settings. This represents a narrow interpretation of secondary prevention that depends on harms being reported rather than identifying vulnerability before harms escalate.

> *One of the clearest manifestations of this fragmentation is the limited involvement of the health sector itself... although many of the harms associated with digital environments are fundamentally public health issues*

The concentration of policy effort at the individual level reflects a broader pattern reported in the online safety literature, whereby responsibility for managing digital risks is placed primarily on children, parents and educators rather than on the systems and commercial environments that shape those risks (Holly et al., 2025; Kickbusch et al., 2025; Kickbusch & Holly, 2024). Individual-level interventions are often politically and administratively easier to implement than measures that regulate digital platforms or require changes to product design. However, this approach leaves important opportunities for upstream prevention underdeveloped. Only a small number of countries in our sample had introduced measures requiring service providers to actively reduce foreseeable risks through platform governance or safety-by-design approaches. As international experts have increasingly argued, protecting children online requires moving beyond education and reporting towards policies that address the structural determinants of digital harms and create healthier digital environments (Holly, 2024; Kickbusch & Holly, 2024; Purba et al., 2026; World Health Organization, 2026).

This shift towards more integrated, multisectoral approaches is increasingly reflected in international policy discourse (Holly, 2024), but our findings suggest that implementation remains uneven. Comprehensive responses spanning prevention levels, socioecological reach and health promotion were observed only in a small number of high-income countries, most notably Australia, the United Kingdom, Germany and the United States, where multiple complementary policy instruments collectively addressed upstream regulation, individual prevention, health promotion and recovery. Colombia's Law 2564 was the closest any single legislative instrument came to achieving similar breadth by embedding online harms within existing health legislation (Ley 2564 de 2026 Congreso de la República de Colombia, 2026). These examples demonstrate that more holistic policy approaches are feasible but remain concentrated in countries with stronger regulatory capacity and more mature digital governance systems. Their relative absence elsewhere raises important equity considerations, as countries with fewer institutional resources may face growing digital harms while lacking the capacity to implement comprehensive prevention strategies.

One of the clearest manifestations of this fragmentation is the limited involvement of the health sector itself. Although many of the harms associated with digital environments, including poor mental health, sleep disruption, body image concerns and broader developmental impacts, are fundamentally public health issues, only four of the instruments analysed were led by health authorities, and only one, Colombia's Law 2564, constituted binding legislation. The remaining health-led instruments

comprised guidance, a strategy and an advisory document. Consequently, governance of children's online safety continues to be framed predominantly as a communications, justice or child protection issue rather than as a population health concern (Castro Lopes et al., 2025). This represents an important missed opportunity. Public health has extensive experience addressing complex environmental risks affecting children through prevention, health promotion and multisectoral action, the very dimensions that were least developed across the policies analysed. Greater involvement of health systems could therefore strengthen both upstream prevention and downstream support for children experiencing online harms.

Beyond broadening sectoral leadership, a public health perspective also offers practical tools to strengthen policy implementation and accountability. Ensuring that policies are translated into measurable improvements in children's well-being is central to public health practice, which has long relied on surveillance systems, routine monitoring and outcome evaluation to refine interventions over time. Applied to children's online safety, this would involve identifying meaningful health and social outcomes linked to the digital determinants of health, monitoring these consistently and using emerging evidence to adapt policy responses. Such approaches would allow governments not only to identify policy gaps but also to assess whether existing interventions are achieving their intended effects.

Overall, this study demonstrates the value of applying a public health framework to the analysis of online safety policies. Classifying policy instruments across prevention levels, socioecological domains and health promotion dimensions provides a systematic way of identifying where policy effort is concentrated and where important gaps remain. Rather than viewing online safety as a collection of isolated regulatory initiatives, this approach conceptualizes it as a coordinated prevention system spanning multiple sectors and levels of intervention. Such a framework can support governments in designing more balanced policy portfolios that combine upstream environmental action, individual prevention, early identification, recovery and health promotion. This may be particularly valuable for countries at earlier stages of policy development, enabling them to build coherent and comprehensive responses rather than accumulating disconnected policy instruments over time.

Limitations

This study has several limitations. First, although the policy mapping followed a structured and transparent search strategy, it was not intended to be exhaustive. Relevant policies may not have been identified, particularly where documents were unavailable, unpublished, not indexed or inaccessible because of language or retrieval limitations. Additionally, the analysis was carried out by a single researcher, which may have introduced researcher biases. To mitigate this, the coding and database were reviewed by a senior researcher to assess consistency and accuracy.

Second, the analysis included a purposive sample of 30 countries across high-, middle- and low-income settings rather than a representative global sample. Although countries were selected using predefined criteria to capture diversity in geography, income level and policy development, the findings should not be interpreted as representative of all countries or extrapolated beyond the study sample.

Third, the analysis examined the breadth of policy content rather than the quality, implementation or effectiveness of individual interventions. The presence of a policy provision does not necessarily indicate that it has been implemented, enforced or has achieved its intended outcomes. The findings should therefore be interpreted as describing the scope and characteristics of national policy responses rather than their impact in practice.

Fourth, the categorization of policy instruments focused on their role within the policy ecosystem rather than their legal force. Consequently, some categories include both non-binding strategies and secondary regulatory instruments that establish specific obligations. Comparisons across these categories should therefore not be interpreted as reflecting differences in legal enforceability. Moreover, the analysis was based on the content of policy documents. Differences in interpretation, implementation and institutional context may influence how policy provisions operate in practice and are not fully captured through document analysis alone.

Finally, the analytical framework was developed by drawing on established public health concepts, including the prevention continuum, socioecological approaches, health promotion and harm reduction, rather than applying a previously validated policy analysis framework. Although the framework has not been formally validated, it provided a coherent and systematic approach for analysing diverse policy instruments across countries and generated findings that were internally consistent. Future research should further refine, validate and test this framework in different policy contexts.

Conclusion

> *Policy responses remain uneven and are concentrated primarily on individual-level prevention and mechanisms to report harm.*

This study demonstrates how a public health framework can be applied to the comparative analysis of children's and adolescents' online safety policies across diverse national contexts. Although governments are increasingly responding to the need to create safer digital environments for children, policy responses remain uneven and are concentrated primarily on individual-level prevention and mechanisms to report harm. Upstream measures that shape digital environments and downstream interventions to support children who experience harm remain comparatively underdeveloped, highlighting important opportunities to strengthen national policy responses.

As the digital determinants of health become increasingly influential in shaping children's health and well-being, online safety should be approached as a public health issue as well as a regulatory one. Applying a public health perspective enables governments to consider prevention across the full continuum, combine action across multiple sectors and levels of influence, and strengthen monitoring and evaluation of policy implementation. This study provides a practical framework for comparing and designing more comprehensive policy responses that protect children from online harms while supporting safe, healthy and meaningful engagement with digital technologies.

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DIGITAL TRANSFORMATIONS FOR HEALTH LAB

GOVERNING HEALTH FUTURES 2030

About DTH-Lab

DTH-Lab is a global consortium of partners working to drive implementation of The Lancet and Financial Times Commission on Governing Health Futures 2030's recommendations for value-based digital transformations for health co-created with young people. DTH-Lab operates through a distributive governance model, led by three core partners: Ashoka University (India), DTH-Lab (hosted by the University of Geneva, Switzerland) and PharmAccess (Nigeria).

Leadership Team

Aferdita Bytyqi, DTH-Lab Executive Director and Founding Member.

Ilona Kickbusch, DTH-Lab Director and Founding Member.

Anurag Agrawal, DTH-Lab Founding Member. Dean of Biosciences and Health Research, Ashoka University.

Rohinton Medhora, DTH-Lab Founding Member. Professor of Practice, McGill University's Institute for the Study of International Development.

Njide Ndili, DTH-Lab Founding Member. Country Director for PharmAccess Nigeria.

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Digital Transformations for Health Lab (DTH-Lab)
Hosted by: The University of Geneva
Campus Biotech, Chemin des Mines 9
1202 Geneva, Switzerland

www.DTHLab.org